REMARKS

The specification has been amended. No new matter was added.

Claims 3-10 and 13-24 are pending.

Claims 17 and 18 were rejected under 35 USC 112 for indefiniteness in the Office Action. Claims 17 and 18 have been amended.

Claims 3-5, 13-15 and 23

Claims 3-5, 13-15 and 23 stand rejected under 35 USC 102(e) over Ruszczyk (U.S. Pat. 6,205,150). Applicant's Claim 3 recites a "computer system" comprising a "host processor," a "peripheral device," and an "attachment bus" "inside the computer system." See Applicant's Figure 1. As discussed with the Examiner on May 28, 2003, Applicant has added "inside the computer system" to Claim 3. Ruszczyk discloses "computer systems" 12, 14, 16, first and second "network devices" 20, 22, e.g., routers, and "network connections" 18. Fig. 1 and col. 4, lines 30-40. Ruszczyk does not disclose a "host processor," a "peripheral device" and an "attachment bus" within a computer system. Ruszczyk does not mention the word "bus." The "network devices" 20, 22 in Ruszczyk are external to the computer systems 12, 14, 16.

As discussed, Applicant has replaced "period" with "cycle" in Claim 3 to further clarify the "bus" inside the computer system. "Cycle" is supported on page 6, lines 14-17 and page 8, lines 20-21 of Applicant's application. In addition, Claim 3 has been amended to recite a control circuit "configured to place data from the second queue onto the bus only when the bus is otherwise unoccupied by first class data."

Ruszczyk does not disclose or suggest a control circuit configured to (a) place at least a minimum amount of data from a first queue onto the bus "during each time cycle" and (b) place data from a second queue onto the bus "only when the bus is otherwise unoccupied by first class data," as recited in Applicant's Claim 3. The sections of Ruszczyk cited in the Office Action do not disclose these aspects. In Ruszczyk, a "first network device 20 schedules the lower priority data packets in the third queue with transmission deadlines" and "when a transmission deadline for a low priority data packet in the third queue has expired, first network device 20 promotes the low priority data packet to the second queue at step 40 thereby preventing the starvation of transmission time for lower priority data packets." Col. 4, lines 61-63, line 66 to col. 5, line 4; col. 5, lines 40, 56-60; col. 6, lines 15-22; block 40 in Fig. 2; block 54 in Fig. 3.

Ruszczyk teaches away from Applicant's Claim 3 because Ruszczyk discloses a "transmission deadline" that prevents lower priority packets from "starving." The control circuit in Claim 3 places data "from a second queue onto the bus only when the bus is otherwise unoccupied by first class data," which may lead to starving of the lower priority packets. Applicant respectfully submits that amended Claim 3 is allowable over Ruszczyk.

Claims 4 and 5 depend from amended Claim 3 and contain all of the limitations of amended Claim 3. Applicant respectfully submits that amended Claims 4 and 5 are allowable over Ruszczyk.

Claims 13 and 23 have been amended as Claim 3. Claims 14 and 15 depend from amended Claim 13 and contain all of the limitations of amended Claim 13. Applicant respectfully submits

that Claims 13-15 and 23 are allowable for the reasons stated above.

Claims 6 and 24

Claims 6 stands rejected under 35 USC 103(a) over Ruszczyk. Claim 6 recites a "Universal Serial Bus" and "isochronous and bulk transfers." "Isochronous and bulk transfers" are described on page 1, lines 19-24 and page 4, lines 9-14 of Applicant's application. Claim 6 has been amended to clarify that the "first type of transfer associated with the first class of data" is an "isochronous transfer," and the "second type of transfer associated with the second class of data" is a "bulk transfer."

The Office Action cites col. 5, lines 61-67 and col. 6, lines 1-26 in Ruszczyk, but these lines do not mention "isochronous" and "bulk" transfers. Col. 6, lines 15-22 of Ruszczyk state:

> "Once a transmission deadline of a lower priority data packet in a low priority queue 66 has expired, a promoter 70 promotes the lower priority data packet to a high priority queue 62 whereby the promoted data packet is scheduled by guaranteed scheduling method 64. The lower priority data packet will then be sent to the transmitter 72 for execution in the order determined by the guaranteed scheduler 64."

There is no mention of "isochronous" or "bulk" transfers.

The Office Action states that "round robin scheduling" is an example of "isochronous transfers." This is inconsistent with Applicant's amended Claim 6. "Round robin scheduling" in Ruszczyk is for low priority data packets. Col. 6, lines 13-15. In contrast, "isochronous transfer" in Applicant's application is for higher priority packets.

The Office Action states that "guaranteed scheduling" is an example of "bulk transfers." This is inconsistent with Applicant's amended Claim 6. "Guaranteed scheduling" in Ruszczyk is for high priority packets. Col. 6, lines 14. In contrast, "bulk transfers" in Applicant's application are for lower priority packets.

As discussed on May 28, the Office Action may have meant "round robin scheduling" is an example of "bulk transfers," and "guaranteed scheduling" is an example of "isochronous transfers." As discussed, the "weighted round robin scheduling" in Ruszczyk is not the same as "bulk transfers" in Claim 6 because "weighted round robin scheduling" schedules low priority data packets using the "transmission deadline" and size of each low priority packet. Col. 5, lines 37-50. This is not a "bulk transfer" in Applicant's Claim 6. Applicant's application states "bulk transfers" are used with "lower priority data" and "do not guarantee bandwidth or priority on the bus." Page 1, line 23 to page 2, line 3.

Claim 6 has been amended to specify the "attachment bus" is "inside the computer system." The Office Action admits that Ruszczyk does not disclose a "Universal Serial Bus." The Office Action does not cite any reference to prove a prima facie case of obviousness for "Universal Serial Bus" and the other elements of Claim 6. Nor does the Office Action cite any reference for a motivation to combine references. It would not have been obvious to combine Ruszczyk with a "Universal Serial Bus" because Ruszczyk discloses computer systems 12, 14, 16, first and second network devices 20, 22, and network connections 18. Fig. 1, col. 4, lines 30-40. In contrast, Applicant's Claim 6 recites a peripheral device and a Universal Serial Bus attachment bus, which is "inside the computer system."

For these reasons, Ruszczyk does not disclose or teach amended Claim 6. Applicant respectfully submits that Claim 24 is allowable for the same reasons stated above for Claim 6.

Claims 7-10 and 16-19 stand rejected under 35 USC 103(a) over Ruszczyk and "RFC 2212 entitled 'Specification of Guaranteed Quality Service' by Shenker et al."

Claims 7-8, 16-17 depend from amended Claims 3 and 13 respectively and include all of the limitations of the base Claim 3. Applicant respectfully submits that amended Claims 7-8, 16-17 are allowable over Ruszczyk for the reasons stated above.

Claims 9-10 and 18-20

Claim 9 has been amended to independent form. Claim 9 is supported by page 7, lines 11-23 of the specification. As discussed, col. 5, lines 5-60 in Ruszczyk does not disclose how the router determines whether a packet is high priority or low priority. Ruszczyk does not disclose "a portion of each packet indicates a virtual channel associated with the packet, and where the classifying circuit includes a storage device that stores information indicating each of the virtual channels that is associated with at least one of the classes," as recited in Claim 9.

Claim 10 depends from Claim 9. Ruszczyk does not disclose a "selection element configured to (a) compare, for each packet, the information in the storage device to the data in the portion of the packet that indicates a virtual channel and (b) select a corresponding one of the queues to receive the packet," as recited in Claim 10.

Claim 18 has been amended to independent form, and Claim 19 depends from Claim 18. For the reasons stated above for Claims

9 and 10, Ruszczyk does not disclose the features of Claims 18 and 19.

As discussed, Claim 20 has been amended to specify functions of the parts. Claim 20 is supported by Figure 2 and page 8 of the specification. No new matter is added. Applicant respectfully submits that Claim 20 is allowable for the reasons stated above.

Claims 21-24

Claims 21-24 are believed to be allowable in view of the amendments and remarks above. For Claim 21, Ruszczyk does not disclose "buses." The Office Action does not cite a reference to show a motivation to combine an internal bus such as a Peripheral Component Interface (PCI) bus with Ruszczyk. Thus, Ruszczyk does not teach Claim 21.

For Claim 22, the Office Action does not cite a reference to show a motivation to combine Ruszczyk with the asynchronous transfer mode (ATM) in Thomas.

The amendments and remarks above are believed to present the pending Claims for allowance. No further search is required since all pending Claims have limitations from the original Claims and/or the original 9-page specification.

Applicant respectfully requests that all Claims be allowed. Enclosed is a Enter $ amount check for excess claim fees. Please apply any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

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